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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/076,633 | 02/19/2002 | Gerald S. Pullman | GTRC152 | 2604 |

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| EXAMINER |
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HAAS, WENDY C

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| ART UNIT | PAPER NUMBER |
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1661

DATE MAILED: 06/09/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/076,633

Applicant(s)

PULLMAN ET AL.

Examiner

Wendy C. Haas

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 February 2005.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-97 is/are pending in the application.
- 4a) Of the above claim(s) 1-20, 22, 23, 25-48 and 50-94 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 21, 24, 49 and 95-97 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim 21 remains rejected under 35 U.S.C. 102(b) as being anticipated by Acevedo et al..

Acevedo et al. teach a culture medium comprising 20mM β -cholorethyltrimethylammonium (CCC, Cycocel) and embryos and mega-gametophytes of *Araucaria araucana*. CCC is a known gibberellin inhibitor. 20mM of CCC is equivalent to 3160 ppm [see attached reference from www.sigmaaldrich.com; 6.33 μ M CCC = 1 mg/L.] *A. araucana* is a South American conifer in the Order Coniferales, Family Araucariaceae.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 24, 49, and 95-97 are rejected under 35 U.S.C. 103(a) as being unpatentable over Acevedo et al. in view of Roberts, Burkhart et al. and Baochun et al., or in the alternative as obvious over Acevedo et al.. The teachings of Acevedo et al. are set forth above.

Roberts teaches a liquid or solid in vitro plant tissue culture medium comprising 0.001 to 10 mg/L of paclobutrazol. [Col.2, lines 19-62.] Roberts further teaches that use of this medium in a plant tissue culture process is “generally applicable to a wide variety of plant species which are capable of propagation by micropropagation techniques. Typical species suitable for treatment in the process of the present invention include . . . evergreen forestry plants and plantation crops.” [Col. 3, lines 63-67 and Col. 4, lines 1-2.]

Roberts does not teach combination of the paclobutrazol-containing culture medium with conifer zygotic embryos, megagametophytes or somatic embryos.

Burkhart et al. teach the use of two gibberellin inhibitors, ancymidol and flurprimidol in culture medium with white pine microshoots.

Burkhart et al. do not teach the combination of GA3 inhibitors in culture medium with conifer zygotic embryos, megagametophytes or somatic embryos; they do not teach the use of paclobutrazol.

Baochun et al. teach the combination of somatic embryos of asparagus with the GA3 inhibitors uniconazole, paclobutrazol and ancymidol.

Baochun et al. do not teach the combination of GA3 inhibitors in culture medium with conifer zygotic embryos, megagametophytes or somatic embryos.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the teachings of Acevedo et al. in conjunction with the teachings of Roberts, Burkhart et al. and Baochun et al. to make a tissue culture medium containing paclobutrazol and conifer somatic or zygotic embryos or megagametophytes. Acevedo et al teach the combination of gibberellin inhibitors and conifer somatic embryos. The teaching of Roberts shows a culture

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medium containing the gibberellin inhibitor paclobutrazol can be used for conifer tissues at the concentrations claimed. Burkhart teaches the successful use of multiple conifer explants and multiple GA3 inhibitors in culture, while the teachings of Baochun et al. show the use of a GA3 inhibitor (paclobutrazol) on somatic embryos (of asparagus). These teachings show that a wide range of GA3 inhibitors are successful additions to culture media with a wide range of explants across conifer species.

Burkhart et al. suggest equating the performance of asparagus in culture to the expected performance of conifer species. This provides motivation for the combination, as does the interchangeable nature of the GA3 inhibitors. (Pullman, the inventor, essentially states this in 2003, noting he also used flurprimidol, CCC and daminozide in the experiments leading to the claimed invention).

In the alternative, the claims are obvious over Acevedo et al. for the reasons set forth below. Claim 24 is obvious in view of Acevedo et al. because paclobutrazol (Bonzi) is also a gibberellin inhibitor known in the art. One would be motivated to substitute paclobutrazol for CCC for a variety of reasons such as ready availability, concerns about toxicity, or the GA₃ inhibiting efficacy of paclobutrazol over a greater range of species (which is known in the art). A person of ordinary skill in the art at the time the invention was made would have a reasonable expectation of success substituting a more effective gibberellin inhibitor for a less effective one, absent empirical evidence to the contrary. As such, the invention as a whole was prima facie obvious to a person of ordinary skill in the art at the time the invention was made.

Claim 49 is obvious in view of Acevedo et al. because a previously initiated somatic embryo would develop in cell culture in the same way a mega-gametophyte or zygotic embryo

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would. As such, any appropriate medium for mega-gametophytes or zygotic embryos would be an obvious choice for somatic embryos as well. As such, the invention as a whole was prima facie obvious to a person of ordinary skill in the art at the time the invention was made.

Claims 95, 96 and 97 are obvious in view of Acevedo et al. for the reasons set forth in the explanations of why Claims 24 and 49 are obvious, and because a person of ordinary skill in the art would be motivated to optimize the concentration of GA₃ inhibitor within any effective set of concentrations known in the art (i.e. such as the 3160 ppm recited in Acevedo et al.) and could readily do so without undue experimentation. As such, the invention as a whole was prima facie obvious to a person of ordinary skill in the art at the time the invention was made.

Conclusion

No claim is allowed.

Response to Applicant's Arguments

1. The docket number of the application will be changed.
2. The rejections under 35 U.S.C. § 112 are dropped in response to Applicant's amendment.
3. Claim 21 remains rejected under 35 U.S.C. § 102(b). Applicant's claim is to a compound. Accordingly, it really doesn't matter what Acevedo et al. teach so long as CCC and a conifer somatic embryo are disclosed. A new use found for a compound does not make the compound suddenly patentable again; only the new use is possibly patentably distinct.

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4. The claim rejections under 35 U.S.C. § 103(a) remain of record for reasons of record. Reasonable motivation for the substitution of CCC and paclobutrazol, one for the other, has now been provided. Prior art disclosing more precise concentrations in relation to the claims has been made of record.

Future Correspondence

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Wendy C. Haas whose telephone number is (571) 272-0976. The examiner can normally be reached on Monday through Friday 9:00 to 5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Andrew Wang can be reached on (571) 272-0811. The fax phone number for the organization where this application or proceeding is assigned is (571) 272-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



W. C. Haas

Patent Examiner
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